

2
Abstract

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A synchronous analog clock movement is provided for use in a secondary clock of a
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master-slave clock system. The movement keeps time independent of the master clock through
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a primary time base and a clock counter of a microprocessor. The movement is capable of
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receiving a time-correction signal from the master clock. The microprocessor controls a
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quartz movement motor. The microprocessor receives and recognizes the time-correction
signal from the master clock, and then performs the time-correction process of advancing the
movement to the correct position. The processor can keep time during a power failure through
the use of a reserve power supply and secondary time base. Upon restoration of power, the
processor will advance the quartz movement to the correct position. Optical sensors are
connected to the microprocessor for determining the position of the hour and minute hands, or
associated gearing, of the quartz movement.